Below are questions received for the bridge deck monitoring on Bonner Bridge. Answers are shown in red.

What NCDOT unit or group will the selected contractor be working with?

Locations and Surveys will be the lead contact for data acquisition and processing; the Geotechnical Unit and Structures Management will assist Location and Surveys after data is processed.

Can permission be obtained to put fixed monitoring equipment on Pea Island or one of the islands in the sound? For example, could monitoring equipment be placed on or near the Oregon Inlet lifesaving station or in another location on the south side of the bridge?

Only if the monitoring device is placed within the NCDOT's existing right of way, preferably near the intersection of NC 12 and the Old Coast Guard Station Road which is located just to the south of the parking lot once you come off the bridge.

Are there any restrictions on placing monitoring equipment on the superstructure or substructure of the bridge?

The Contractor shall not narrow or decrease the vertical clearance through the navigational channels. In areas other than the navigational channels, any devices shall be located so as not to impede normal waterway traffic. Any instrument must first be approved by Structures Management prior to attachment to the structure.

The RFP states that the equipment must be "portable" and "mobile"? Can more explanation be provided for these terms, especially for the scour monitoring system?

The monitoring system must be portable in the sense that it can be easily moved, in a timely manner, for a low cost, in order to monitor other bents and spans. The subject bridge consists of a variety of bent types. The monitoring configuration should meet the mobility requirement while accounting for this variety.

What resolution and accuracy is desired for the bridge deck movement?

.01 ft.

What resolution and accuracy is desired for the scour monitoring?

Accurate to within 1.0 ft.

As part of the evaluation of candidate monitoring systems, we need more information on the geometry of the spans and bents. Can you provide scaled drawings of the superstructure and substructure.

We can provide a pdf file of the original bridge plans and the crutch bents that have been incorporated. Please email Scott Blevins (sblevins@ncdot.gov) to receive a copy.

What are the ranges of water depths for low tide and high tide for the bents where the NCDOT wants to monitor scour depth?

The water depths in prospective regions range from 25 ft. to 60 ft. based on the mean tide level. The normal tidal variation is ±2 ft.

How is access provided for installation of the instrumentation on the bridge spans?

Lane closures on NC 12 will be the responsibility of the team. The department will review and approve the team's proposed access plans.

What is the desired reading frequency for continuous monitoring?

Hourly

Portable and mobile: How often will the instrumentation need to be moved? Who will be responsible for moving the instrumentation?

Instrumentation will be moved as directed by the department. The team will be responsible for moving the instrumentation.

Do you want pricing included in the proposal?

No. The department will negotiate the price with the selected firm/team.

The RFP requires an optional procedure for the use of sonar in monitoring sand movement in the immediate vicinity of piles supporting up to two bridge piers. Are measurements required to be taken at the two bridge piers simultaneously?

Sonar measurements should be sufficient to cover one to two piers, preferably all piling, simultaneously. The same type of notification system should be in place to provide notice when inlet floor elevations go below the critical scour elevation at identified pilings.

The RFP requires that the sonar equipment and procedures to be portable and mobile.

What is the definition of portable and mobile? For example, should the sonar equipment have the ability to be moved to different locations (piers) within the same bridge, say within 24 hours? Or does it refer to the re-use of the sonar equipment at a different bridge after the monitoring period?

Is the RFP referring specifically to mobile sonar equipment, e.g. a sonar truck or sonar board? If yes, will measurements be required to be taken during storm events?

Equipment should be portable in that it should take no longer than a week to move. Cost and effort to move should be not be prohibitive. Mobile requirement is for all measuring devices. Different points on the same bridge, depending upon sand movement. Measurements should be able to be taken during storm events

Which of the following are of interest to NC DOT in terms of sonar measurements of the inlet floor?

Long term aggradation/degradation?

Pier scour?

The data provided from these single point soundings will supplement NCDOT's side scan SONAR. Specific use for SONAR measurements is for pier scour

Is there a water level gauge at the bridge that could be tied-in into the sonar measuring equipment?

No. SONAR readings will be converted to elevations based on NCDOT vertical datum.

What is the means of access to the pier(s)? Is it from the top of the bridge or from a boat?

All access for maintenance should be provided and coordinated by the firm. The intent is not to have the Department providing costly and time consuming duties in order to service faulty equipment. If the Department requests the system to be moved, boat access, a platform truck and the necessary lane closure may be provided by the Department (Division 1) or the team.

If a boat is required to access the pier(s), will NC DOT provide the boat and cover all associated costs?

All necessary equipment will be provided by the selected firm/team.

What is the specific definition of continuous measurement for the sonar?

Hourly is sufficient

Who shall be responsible for the determination of the location of the sonar sensor and measurements within a given pier, e.g. directly at the upstream nose of the pier, etc.?

NCDOT staff will determine the locations

Can the latest bridge inspection report be made available?

Yes. Please email Scott Blevins (sblevins@ncdot.gov) to request a copy.

Can the latest soundings be made available?

Yes. Please email Scott Blevins (sblevins@ncdot.gov) to request a copy.